

PATENT
USSN 09/990,080
Docket 018/258c

CLAIM AMENDMENTS

1. (*Currently amended*) ~~A protein, peptide, or peptide mimetic that inhibits human telomerase, which has a sequence consisting of at least 500 consecutive amino acids~~

A polypeptide encoded by DNA that hybridizes to a sequence complementary to SEQ. ID NO:1 at 5°C to 25°C below T_m in aqueous solution at 1 M NaCl,

wherein T_m is the melting temperature of double-stranded DNA having the sequence of SEQ. ID NO:1 under the same reaction conditions;

except that said protein, peptide, or peptide mimetic contains one or more deletions, each of which consists essentially of wherein said polypeptide has one or more of the following deletions:

- a) residues 560-565,
- b) residues 930-934,
- c) at least 10 consecutive amino acids from residues ~~323-450~~ 326-415,
- d) at least 10 consecutive amino acids from residues 637-660,
- e) at least 10 consecutive amino acids from residues 748-766,
- f) at least 10 consecutive amino acids from residues 1055-1071, or
- g) at least 10 consecutive amino acids from residues 1084-1116

of SEQ. ID NO:2 ;

and wherein said polypeptide inhibits telomerase enzyme activity when introduced into a cell expressing human telomerase reverse transcriptase (hTERT) (SEQ. ID NO:2).

2. (*Currently amended*) ~~A protein, peptide, or peptide mimetic that inhibits human telomerase, which has a sequence consisting of at least 500 consecutive amino acids of SEQ. ID NO:2; except that it contains one or more deletions, each of which consists essentially of~~
A polypeptide consisting essentially of at least 500 consecutive amino acids of SEQ. ID NO:2, except that it contains one or more deletions that include:

- a) residues 560-565,
- b) residues 930-934, or
- c) at least 10 consecutive amino acids from residues ~~323-450~~ 326-415,
- d) at least 10 consecutive amino acids from residues 637-660,
- e) at least 10 consecutive amino acids from residues 748-766,
- f) at least 10 consecutive amino acids from residues 1055-1071, or
- g) at least 10 consecutive amino acids from residues 1084-1116

of SEQ. ID NO:2 ;

wherein said polypeptide lacks telomerase catalytic activity, but elicits an antibody response against hTERT when used to immunize a rabbit or mouse.

PATENT
USSN 09/990,080
Docket 018/258c

3. ~~(Currently amended) The protein, peptide, or peptide mimetic of claim 1, which contains one or more deletions consisting essentially of residues 560-565, 930-934, 323-450, 637-660, 748-766, 1055-1071, or 1084-1116 of SEQ. ID NO:2~~
A polypeptide consisting essentially of at least 500 consecutive amino acids of SEQ. ID NO:2, except that it contains one or more deletions that consist essentially of residues 560-565, 930-934, 326-415, 637-660, 748-766, 1055-1071, or 1084-1116 of SEQ. ID NO:2,
wherein said polypeptide lacks telomerase catalytic activity, but elicits an antibody response against hTERT when used to immunize a rabbit or mouse.
4. ~~(Currently amended) The protein, peptide, or peptide mimetic of claim 2, which consists essentially of full-length human telomerase amino acid sequence, except for said deletion(s)~~
A polypeptide lacking telomerase enzyme activity, wherein said polypeptide comprises full-length hTERT (SEQ. ID NO:2), except for one or more deletions(s) that include:
a) residues 560-565,
b) residues 930-934,
c) at least 10 consecutive amino acids from residues 323-450,
d) at least 10 consecutive amino acids from residues 637-660,
e) at least 10 consecutive amino acids from residues 748-766,
f) at least 10 consecutive amino acids from residues 1055-1071, or
g) at least 10 consecutive amino acids from residues 1084-1116.
5. ~~The protein, peptide, or peptide mimetic of claim 2, which is a dominant-negative mutant~~
A polypeptide lacking telomerase enzyme activity, wherein said polypeptide comprises full-length hTERT (SEQ. ID NO:2), except for one or more deletions(s) consisting essentially of residues 560-565, 930-934, 326-415, 637-660, 748-766, 1055-1071, or 1084-1116,
wherein said polypeptide lacks telomerase catalytic activity.
6. ~~(Currently amended) The protein, peptide, or peptide mimetic~~ The polypeptide of claim 2, which binds human telomerase RNA component but lacks processive telomerase activity.
7. ~~(Currently amended) The protein, peptide, or peptide mimetic~~ The polypeptide of claim 2, which binds human telomeres but lacks processive telomerase activity.
8. CANCELLED

PATENT
USSN 09/990,080
Docket 018/258c

9. *(Currently amended)* A peptide mimetic according to claim 13, wherein one or more linkages between consecutive amino acids in the mimetic is $-\text{CH}_2\text{NH}-$, $-\text{CH}_2\text{S}-$, $-\text{CH}_2\text{CH}_2-$, $-\text{CH}=\text{CH}-$, $-\text{C}(=\text{O})\text{CH}_2-$, $-\text{CH}(\text{OH})\text{CH}_2-$, or $-\text{CH}_2\text{SO}-$.
10. *(Currently amended)* A method of inhibiting telomerase catalytic activity, comprising introducing ~~a protein, peptide, or peptide mimetic~~ a polypeptide according to claim 1 into an environment containing telomerase reverse transcriptase.
11. *(Currently amended)* A method of inhibiting telomerase catalytic activity, comprising introducing a ~~protein, peptide, a peptide, polypeptide,~~ or peptide mimetic according to claim 13 into an environment containing telomerase reverse transcriptase and telomerase RNA component.
12. *(Currently amended)* A method of inhibiting telomerase catalytic activity in a cell, comprising expressing in the cell a nucleic acid encoding ~~a protein, peptide, a polypeptide~~ according to claim 2.

PATENT
USSN 09/990,080
Docket 018/258c

13. (*Currently amended*) ~~A protein, peptide, A peptide, polypeptide,~~ or peptide mimetic that has a means for inhibiting ~~telomerase activity~~ the activity of human telomerase.
14. (*Currently amended*) ~~The protein, peptide, The peptide, polypeptide,~~ or peptide mimetic of claim 13, which ~~has a means for binding~~ binds human telomerase RNA component, but which lacks telomerase catalytic activity.
15. (*Currently amended*) ~~The protein, peptide, The peptide, polypeptide,~~ or peptide mimetic of claim 13, which ~~lacks a means for binding~~ does not bind human telomerase RNA component.
16. (*Currently amended*) ~~The protein, peptide, or peptide mimetic of~~
A polypeptide according to claim 14, wherein the human telomerase inhibition means ~~consists of~~
~~at least 500 consecutive amino acids~~
is encoded by DNA that hybridizes to a sequence complementary to SEQ. ID NO:1 at 5°C to 25°C below T_m in aqueous solution at 1 M NaCl,
wherein T_m is the melting temperature of double-stranded DNA having the sequence of SEQ. ID NO:1 under the same reaction conditions;
except that said protein, peptide, or peptide mimetic contains one or more deletions, each of which consists essentially of
- a) residues 560-565,
 - b) residues 930-934,
 - c) at least 10 consecutive amino acids from residues ~~323-450~~ 326-415,
 - d) at least 10 consecutive amino acids from residues 637-660,
 - e) at least 10 consecutive amino acids from residues 748-766,
 - f) at least 10 consecutive amino acids from residues 1055-1071, or
 - g) at least 10 consecutive amino acids from residues 1084-1116
- of SEQ. ID NO:2.
17. (*Currently amended*) ~~The protein, peptide, or peptide mimetic~~ polypeptide of claim 16, wherein the human telomerase inhibition means contains one or more deletions consisting essentially of residues 560-565, 930-934, ~~323-450~~ 326-415, 637-660, 748-766, 1055-1071, or 1084-1116 of SEQ. ID NO:2.
18. (*Withdrawn*) (*Currently amended*) ~~The protein, peptide, The peptide, polypeptide,~~ or peptide mimetic of claim 15, wherein the human telomerase inhibition means has a sequence consisting essentially of FFYVTE (SEQ. ID NO:3).

PATENT
USSN 09/990,080
Docket 018/258c

19. *(Withdrawn) (Currently amended)* ~~The protein, peptide, The peptide, polypeptide,~~ or peptide mimetic of claim 15, wherein the human telomerase inhibition means has a sequence consisting essentially of FYVT (SEQ. ID NO:5).
20. *(Withdrawn) (Currently amended)* ~~The protein, peptide, The peptide, polypeptide,~~ or peptide mimetic of claim 15, wherein the human telomerase inhibition means has a sequence consisting essentially of at least 10 consecutive amino acids in YGVLLKTHCPLRAA (SEQ. ID NO:4).
21. *(Currently amended)* A method of inhibiting telomerase catalytic activity in a cell, comprising expressing in the cell a nucleic acid encoding ~~a protein or peptide~~ a peptide or polypeptide according to claim 13.
22. *(New)* A method of producing an inactive variant of telomerase reverse transcriptase in a cell, comprising transfecting the cell to express a polypeptide according to claim 2.